Chairman Pedro Nieves Miranda
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Avenida de Ponce de León 1308
Carretera Estatal 8838
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Rio Piedras, Puerto Rico 00926

Re: EPA Comments on PR EQB's draft "Guidelines for Use of Carbon Combustion Residues"

Dear Chairman Nieves:

I am writing to provide comments on the draft "Guidelines for Use of Carbon Combustion Residues," which you provided for our review by electronic mail on June 19, 2012.

In terms of background, and as discussed in previous correspondence, the U.S. Environmental Protection Agency (EPA) has communicated that the unencapsulated reuse of coal ash has raised concerns. In its 2010 proposed rule[1], EPA stated that: "*...unencapsulated uses have raised concerns and merit closer attention. For example, the placement of unencapsulated [Coal Combustion Residuals (CCRs)] on the land, such as in road embankments or in agricultural uses, presents a set of issues, which may pose similar concerns as those that are causing the Agency to propose to regulate CCRs destined for disposal...*" (75 F.R. 35160). Accordingly, EPA solicited comments on whether to regulate unencapsulated use on the land, and has not yet issued its decision.

Based upon our review of the draft Guidelines, we have the following concerns and recommend the final Guidelines address these comments. Where available, we have provided information from other current state guidelines.

1. The Guidelines require use of the EPA Toxicity Characteristic Leaching Procedure (TCLP) and the EPA Synthetic Precipitation Leaching Procedure (SPLP) to demonstrate the leaching potential[2] from coal ash reuse. EPA believes that the TCLP and SPLP may underestimate the potential for leaching of hazardous constituents from coal ash reuse when compared to analysis by the Leaching Environmental Assessment Framework (LEAF). As you may know, EPA developed the LEAF methods in response to concerns raised by the National

[1] Disposal of Coal Combustion Residuals From Electric Utilities; Proposed Rule, June 21, 2010, 75 F.R. 35128 – 35264

[2] Allows, but does not specify other analytical methods

Academy of Science, the EPA Science Advisory Board, and others over the use of single point pH tests such as TCLP and SPLP for evaluating the leaching potential of coal combustion residuals. The LEAF methods, and the rationale behind their development and proposed uses, are well documented. For more information, you may wish to refer to Evaluating the Fate of Metals in Air Pollution Control Residues from Coal-Fired Power Plants, Environmental Science and Technology, 2010, 44, 7351 – 7356; EPA Science Advisory Board letter to EPA Administrator Carol Browner, February 26, 1999, EPA-SAB-EEC-COM-99-002; Background Information for the Leaching Environmental Assessment Framework (LEAF) Test Methods, November 2010, EPA/600/R-10/170; Characterization of Coal Combustion Residues from Electric Utilities – Leaching and Characterization Data, December 2009, EPA-600/R-09/151; and the EPA proposed rule. Additionally, please be advised that the LEAF methods passed inter-laboratory validation testing in December 2011, and, pending the anticipated 2012 publication of a Notice of Data Availability in the Federal Register and subsequent evaluation and potential incorporation of any public comment, will be submitted for posting as new methods on the website for EPA's Test Methods for Evaluating Solid Waste, Document SW-846.

2. The Guidelines do not require water quality monitoring where quantities of coal ash are placed on land. EPA is concerned that unprotected uses have the potential to migrate over time through leaching causing harm to the environment and human health.

   For example, the State of Pennsylvania requires that a water quality monitoring plan be developed and implemented if certain conditions are met.

3. The Guidelines limit the amounts of coal ash to be reused as road base (i.e., to a 2 foot maximum thickness), but do not limit amounts to be used for structural fill placed on land.

   For example, the State of Minnesota (Minnesota Administrative Rule 7035.2860) restricts use "*…in quantities that exceed accepted engineering or commercial standards…*" and stipulates that *"...excess use of solid waste is not authorized...and is considered disposal..."* In addition, the State of Pennsylvania requires that coal ash used for structural fill be *"...compacted in layers not exceeding 2 feet in thickness..."*

4. The Guidelines require that cover material to be placed on top of coal ash, but do not specify the type or amount of cover material required.

   For example, the State of Pennsylvania requires that coal ash used for structural fill be *"...covered with 12 inches of soil, unless infiltration is prevented by other cover material..."*

5. The Guidelines do not prohibit coal ash reuse in residential areas. EPA recommends EQB add residential areas to the list of restricted locations.

   For example, the State of Wisconsin prohibits use in residential areas, except in *"...roadway designed with a rural type cross-section..."*

6. The Guidelines do not establish public notice requirements for any coal ash reuse projects. EPA recommends EQB consider establishing such requirements.

7. The Guidelines do not include coal ash reuse requirements that would prevent the current practice of placing unencapsulated CCR on the land in such a way that there is no apparent beneficial engineering application which EPA perceives to be occurring with the disposal of coal ash on the land in Guayama, Salinas, and Arroyo, Puerto Rico.

8. The Guidelines allow coal ash to be used for soil modification and stabilization, potentially expanding its use in Puerto Rico beyond current use. While it is recognized that coal combustion residuals are allowed to be reused in this manner in many states, EPA's proposed CCR rule stated that: *"...previous risk analyses do not address many of the use applications currently being implemented, and have not addressed the changes to CCR composition with more advanced air pollution control methods and improved leachate characterization. In addition, some scientific literature indicates that the uncontrolled (i.e., excessive) application of CCRs can lead to the potentially toxic accumulation of metals (e.g., in agricultural applications and as fill material)..."* (75 F.R. 35164). EPA is concerned this type of application has the potential to be considered illegitimate or "sham" recycling. Considerations in making a determination on whether an activity is "sham recycling" include whether the secondary material is effective for the claimed use, if the secondary material is used in excess of the amount necessary, and whether the facility has maintained records of the recycling transaction.

9. The Guidelines do no specifically address the storage of CCRs prior to reuse. EPA recommends that the Guidelines specify that the CCRs be stored in a lined cell with leachate collection and ground water monitoring.

10. The Guidelines address the reuse of light ash and bottom ash (through definition and identification permitted uses), however, the guidelines do not appear to address the reuse of an aggregate of the light ash and bottom ash (i.e. Agremax). EPA recommends the Guidelines explicitly address the reuse of the aggregate.

11. With respect to municipal landfills or landfill systems, EPA notes that the proposed CCR Guidelines need to be reviewed in the context of EQB's solid waste regulations, and federal landfill criteria, to ensure the Guidelines do not conflict with federal landfill criteria or EQB solid waste regulations.

We look forward to continuing to work with you on this important issue. Please do not hesitate to call me at (212) 637-4070 if you have any questions regarding this matter.

Sincerely,

George C. Meyer, P.E., Chief
RCRA Compliance Branch

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